

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Christoph Brabec	Art Unit	: 1795
Serial No.	: 10/522,862	Examiner	: Golam Mowla
Filed	: September 6, 2005	Conf. No.	: 4870
Title	: CHIP CARD COMPRISING AN INTEGRATED ENERGY CONVERTER		

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

(1) Real Party in Interest

Konarka Technologies, Inc.

(2) Related Appeals and Interferences

None known.

(3) Status of Claims

Claims 1-20 are pending in this case and stand finally rejected. See Appendix of Claims. Claims 1-20 have been twice rejected. Claims 1-20 are presented for appeal.

(4) Status of Amendments

No amendments have been made since the issuance of the final office action dated July 9, 2008.

(5) Summary of Claimed Subject Matter

Claims 1 and 9 are the only independent claims presented in this appeal.

With respect to independent claim 1, Appellant's claimed subject matter relates to a chip card including an energy converter that occupies either a portion or an entire surface area of the chip card, so that an energy supply of the chip card is integrally present thereon. See, e.g., original claim 1, page 1, lines 15-17, and page 2, lines 15-18 of the specification. The energy converter includes a photovoltaically active polymeric compound. See, e.g., page 2, lines 3-5 and 9-11 of the specification.

With respect to independent claim 9, Appellant's claimed subject matter relates an article that includes a chip card having a surface and a photovoltaic cell supported by at least a portion of the surface of the chip card. See, e.g., original claim 1, page 1, lines 15-21, and page 2, lines 15-18 of the specification. The photovoltaic cell includes a photovoltaically active polymeric compound. See, e.g., page 2, lines 3-5 and 9-11 of the specification.

Each of the other pending claims depends from claim 1 or 9.

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 1-4, 8-14, and 18 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou, U.S. Patent Application 2002/0088863 ("Ou") in view of Loutfy et al., U.S. Patent 4,175,982 ("Loutfy"). Claims 5, 6, 15, and 17 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Hirano, U.S. Patent No. 4,104,083 ("Hirano"). Claims 6 and 16 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Kan et al., JP 2001-203377 ("Kan"). Claims 7 and 19 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Phillipps, GB 2320356 ("Phillipps"). Claim 13 is finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy. Claim 20 is finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Suzuki, U.S. Patent 4,801,787 ("Suzuki").

(7) Argument

Claims 1-4, 8-14, and 18

Claims 1-4, 8-14, and 18 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy.

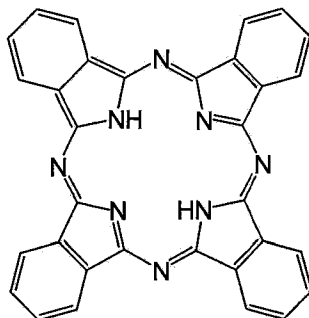
Independent claims 1 and 9 are discussed first. Claims 1 and 9 cover articles containing a photovoltaically active polymeric compound. Appellant notes that the specification states, "the terms ['polymer,' 'organic material,' and 'functional polymer'] are not intended to be subject to any limitation with respect to molecular size, particularly to polymeric and/or oligomeric materials, but instead the use of 'small molecules' is completely feasible as well." See page 2, lines 9-11; emphases added. However, Appellant would like to point out that claims 1 and 9 do not recite any of the terms "polymer," "organic material," and "functional polymer" mentioned above, which can

include small molecules according to their definitions in the specification. Instead, claims 1 and 9 recite a polymeric compound, which is a term different from the terms mentioned above and is not specifically defined in the specification. The ordinary and accustomed meaning of the term “polymeric compound” is a molecule containing a relatively large number of monomeric repeat units. This meaning is consistent with the specification. Indeed, given that the specification recites both “polymeric materials” and “oligomeric materials,” one skilled in the art could readily understand that a polymeric material is different from and has a larger molecular size than an oligomeric material.¹ Thus, one skilled in the art could recognize that Appellant’s intention for reciting the term “a polymeric compound” in claims 1 and 9, rather than the terms “polymer,” “organic material,” and “functional polymer” defined in the specification, is to exclude oligomeric materials or small molecules from these two claims.

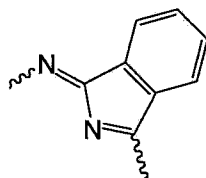
Ou describes an IC card having a solar battery supported by the IC card. See, e.g., the abstract and paragraph [0019]. However, it does not disclose or render obvious an article containing a photovoltaically active polymeric compound, as required by claims 1 and 9. Indeed, Ou is entirely silent on the photovoltaically active materials used in its solar battery.

Loutfy does not cure the deficiency in Ou. In the final office action, the Examiner asserted that “Loutfy discloses a photovoltaic cell ... wherein the photoactive layer includes a photovoltaically active polymeric compound (metal-free phthalocyanine; col. 3, lines 15-45).” See the final office action, page 3, 2nd paragraph. Appellant respectfully disagrees. As discussed above, the term “a polymeric compound” refers to a molecule containing a relatively large number of monomeric repeat units and excludes oligomeric materials or small molecules. By contrast, a phthalocyanine is of the following formula:

¹ Note that, according to Wikipedia, “[i]n chemistry, an oligomer consists of a limited number of monomer units, ... in contrast to a polymer which, at least in principle, consists of an unbounded number of monomers.” See <http://en.wikipedia.org/wiki/Oligomer>. An online dictionary also defines the term “oligomer” as a molecule consisting of just a few monomers. See <http://cancerweb.ncl.ac.uk/cgi-bin/omd?query=oligomer>.



One skilled in the art can readily understand that phthalocyanine is not “a polymeric compound” within the meaning of this term as used in the specification. During a telephone interview held on August 13, 2008, the Examiner asserted that “phthalocyanine is a polymer, which formed by reacting multiple monomeric units.” See the Interview Summary dated August 20, 2008. It appears to be the Examiner’s position that the monomeric repeat unit in a phthalocyanine is



. However, even assuming that the Examiner is correct (which Appellant does not concede), a phthalocyanine is a molecule containing only four monomeric repeat units. In other words, it is at most an oligomeric compound, not a polymeric compound as required by claims 1 and 9. Thus, Appellant submits that the phrase “photovoltaically active polymeric compound” recited in claims 1 and 9 does not include phthalocyanine.

Finally, Appellant would like comments on certain statements made by the Examiner in the advisory action dated October 2, 2008.

First, the Examiner asserted that “Applicants cites portion of the specification which defines ‘the terms polymer, organic material, and functional polymer are not intended to be subject to any limitation with respect to molecular size, particularly to polymeric and/or oligomeric materials, but instead the use of ‘small molecules’ is completely feasible as well. ... Therefore, phthalocyanine compound of Loutfy reads on instant polymeric material, although it may be ‘small molecules’ with few repeating units.” As discussed above, Appellant recites the term “a polymeric compound” in claims 1 and 9, rather than the terms “polymer,” “organic material,” and “functional polymer” defined in the specification, to exclude oligomeric materials or small molecules. In other words,

Appellant already excluded use of phthalocyanine in the articles of claims 1 and 9 by reciting the phrase "photovoltaically active polymeric compound" in these two claims.

Second, the Examiner asserted that "Merriam-Webster online dictionary defines 'polymer' as a chemical compound or mixture of compounds formed by polymerization and consisting essentially of repeating structural units ... Since phthalocyanine compound of Loutfy has repeating structural units, it is a polymeric compound." Appellant respectfully disagrees. The definition of the term "polymer" quoted by the Examiner is consistent with the same term defined in the specification. However, as discussed above, claims 1 and 9 recite the term "polymeric compound," not "polymer." As also discussed above, the specification defines "polymer" to include polymeric materials, oligomeric materials, and small molecules. It is clear that the specification intends to the term "polymeric materials" (or polymeric compounds) to mean materials or compounds different from oligomeric materials or small molecules. Thus, Appellant submits that phthalocyanine is not "a polymeric compound" within the meaning of this term as used in the specification.

Finally, the Examiner asserted that "phthalocyanine is a polymeric compound as evidenced by USP 4649189, col. 6, line 44 - col. 7, line 60, and claims 6 and 10 on col. 13-14." U.S. Patent 4,649,189 describes a method of making a phthalocyanine polymer by using an imide-linked bisphthalonitrile. See, e.g., the abstract. It appears that the phthalocyanine polymer contains four monomers. See, e.g., column 6, line 44 to column 7, line 60. Again, as discussed above, such a phthalocyanine is not "a polymeric compound" within the meaning of this term as used in the specification.

In sum, even though Loutfy describes a photovoltaic cell that includes a phthalocyanine in a photoactive layer, it still does not disclose or render obvious articles containing a photovoltaically active polymeric compound, as required by claims 1 and 9, and therefore does not cure the deficiency in Ou.

For at least the reasons set forth above, claims 1 and 9 are not obvious over the Ou in view of Loutfy. Since each of claims 2-4, 8, 10-14, and 18 depends from claim 1 or 9, these claims are also not obvious over Ou in view of Loutfy.

Claims 5, 6, 15, and 17

Claims 5, 6, 15, and 17 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Hirano.

Each of claims 5, 6, 15, and 17 depends from claim 1 or 9. Similar to claims 1 and 9, claims 5, 6, 15, and 17 cover articles containing a photovoltaically active polymeric compound.

As discussed above, neither Ou nor Loutfy discloses or render obvious an article containing a photovoltaically active polymeric compound, as required by claims 5, 6, 15, and 17. Hirano does not cure the deficiency in Ou and Loutfy. Indeed, although Hirano mentions solar cells, it is entirely silent on solar cells containing a photovoltaically active polymeric compound, as required by claims 5, 6, 15, and 17.

Thus, claims 5, 6, 15, and 17 are not obvious over Ou in view of Loutfy and Hirano.

Claims 6 and 16

Claims 6 and 16 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Kan.

Claims 6 and 16 depend from claims 1 and 9, respectively. Similar to claims 1 and 9, claims 6 and 16 cover articles containing a photovoltaically active polymeric compound.

As discussed above, neither Ou nor Loutfy discloses or renders obvious an article containing a photovoltaically active polymeric compound, as required by claims 6 and 16. Kan does not cure the deficiency in Ou and Loutfy. Specifically, Kan describes a photoelectric conversion layer having an inorganic system or an organic system semiconductor. See paragraph [0008]. The organic system semiconductor can be a porphin derivative, a phthalocyanine derivative, and a cyanine derivative. Id. However, none of these organic semiconductors are a photovoltaically active polymeric compound, as required by claims 6 and 16.

Thus, claims 6 and 16 are not obvious over Ou in view of Loutfy and Kan.

Claims 7 and 19

Claims 7 and 19 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Phillipps.

Claims 7 and 19 depend from claims 1 and 9, respectively. Similar to claims 1 and 9, claims 7 and 19 cover articles containing a photovoltaically active polymeric compound.

As discussed above, neither Ou nor Loutfy discloses or renders obvious an article containing a photovoltaically active polymeric compound, as required by claims 7 and 19. Phillipps does not cure the deficiency in Ou and Loutfy. Phillipps describes a photoelectrochemical cell containing an oxide semiconductor (see page 3, lines 10-15), which is not a polymeric compound. In other words, similar to Ou and Loutfy, Phillipps does not disclose or render obvious an article containing a photovoltaically active polymeric compound, as required by claims 7 and 19.

Thus, claims 7 and 19 are not obvious over Ou in view of Loutfy and Phillipps.

Claim 13

Claim 13 is finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy.

Claim 13 depends from claims 9. Similar to claim 9, claim 13 covers articles containing a photovoltaically active polymeric compound. As discussed above, neither Ou nor Loutfy discloses or renders obvious an article containing a photovoltaically active polymeric compound, as required by claim 13.

Thus, claim 13 is not obvious over Ou in view of Loutfy and Phillipps.

Claim 20

Claim 20 is finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ou in view of Loutfy and Suzuki.

Claim 20 depends from claim 9. Similar to claim 9, claim 20 covers articles containing a photovoltaically active polymeric compound.

As discussed above, neither Ou nor Loutfy discloses or renders obvious an article containing a photovoltaically active polymeric compound, as required by claim 20. Suzuki does not cure the deficiency in Ou and Loutfy. Indeed, although Suzuki mentions solar cells, it is entirely silent on solar cells containing a photovoltaically active polymeric compound, as required by claim 20.

Thus, claim 20 is not obvious over Ou in view of Loutfy and Suzuki.

For at least the reasons set forth above, Appellant submits that the rejections should be reversed.

The brief fee pursuant to 37 CFR 41.20(b)(2) in the amount of \$540.00 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges to Deposit Account No. 06-1050, referencing Attorney's Docket No. 21928-0005US1.

Respectfully submitted,

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Appendix of Claims

1. (Previously Presented) A chip card comprising an energy converter that occupies either a portion or an entire surface area of the chip card, so that an energy supply of the chip card is integratedly present thereon,

wherein the energy converter comprises a photovoltaically active polymeric compound.

2. (Previously Presented) The chip card as defined in claim 1, wherein the energy converter is a photovoltaic cell.

3. (Previously Presented) The chip card as defined in claim 2, wherein the photovoltaic cell is a polymer solar cell.

4. (Previously Presented) The chip card as defined in claim 1, wherein the energy converter covers the back side and/or the front side and/or subareas of one of the sides of the chip card.

5. (Previously Presented) The chip card as defined in claim 1, wherein the energy converter is semitransparent.

6. (Previously Presented) The chip card as recited in claim 1, wherein the energy converter is colored and/or opaque.

7. (Previously Presented) The chip card as defined in claim 1, wherein the energy converter is applied over a display unit of the chip card.

8. (Previously Presented) The chip card as defined in claim 1, wherein the energy converter is producible directly on the chip card.

9. (Previously Presented) An article, comprising:
a chip card having a surface; and
a photovoltaic cell supported by at least a portion of the surface of the chip card, the photovoltaic cell comprising a photovoltaically active polymeric compound.

10. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is capable of acting as an energy supply for the chip card.

11. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is a solar cell.

12. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is a polymer solar cell.

13. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is integral with the chip card.

14. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is printed on the chip card.

15. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is semitransparent or transparent.

16. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is colored.

17. (Previously Presented) The article of claim 9, wherein the photovoltaic cell is opaque.

18. (Previously Presented) The article of claim 9, further comprising a display unit.

19. (Previously Presented) The article of claim 18, wherein the photovoltaic cell is supported by the display unit.

20. (Previously Presented) The article of claim 9, wherein the chip card is selected from the group consisting of credit cards and security cards.

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Evidence Appendix

None.

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Related Proceedings Appendix

None.